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No. VII.

PORTABLE TANK.

The SILVER MEDAL *was presented to Mr. W.* BADDELEY, *for his Portable Dam or Tank for use at Fires. The following communication has been received from him on the subject, and a Model of the Tank has been placed in the Society's Repository.*

Wellington Street, Blackfriars' Road,
March 6, 1838.

SIR,

I WILL thank you to submit to the consideration of the Society of Arts the accompanying model of a portable dam or tank, for procuring expeditiously a supply of water for fire-engines.

It is now upwards of sixteen years since I was first struck with the inconvenient mode followed by the London firemen for supplying their engines with water. This was at that time accomplished by tearing up the road-paving to form a dam, in which, the water issuing from a plug, fire-cock, &c. was collected in a body; the end of the suction-pipe being laid therein, the water was thence drawn up on working the engine. Getting up the stones was always a work of great difficulty, and since the introduction of the improved method of paving with *sovereigns*, has become almost, if not quite, impossible. To avoid all the evils arising out of the difficulties just stated, and economise as much as possible the men's labour and time (both invaluable at fires), I invented a piece of apparatus, which I called a portable dam. The first were made very strong, entirely of wood; but, by the employment of canvass sides (as in the model herewith sent), a more portable and convenient form is obtained.

The apparatus consists of a wooden frame, about three feet long and two feet wide, and a bottom-board six inches smaller each way, with a circular aperture in the middle, furnished with a female screw. A piece of stout canvass, from fifteen to eighteen inches deep, connects the frame to the base-board. Two forked pieces of metal, hinged to either end of the frame, take into racks in the base-board and support the frame. A brass tube, of a size to fit all the fire-plugs, screws into the circular opening. On reaching a fire, and a plug being opened, the tube is put into it, and the dam is instantly filled with water; the suction-pipe being laid therein, the engine may commence working. In this way a fire-engine can now be got to work in one minute and a half; under the usual method of proceeding, from twenty to thirty minutes frequently elapsed before this could be accomplished.

When an engine is not working from a plug, but from water brought in buckets, &c., instead of the tube before mentioned, a brass cap is screwed on to the bottom, and the water poured into the cistern thus formed, which is much better.for the purpose than the engine cistern, as it can be surrounded, is clear of the handles, the parties working the engine are not splashed, &c. In the employment of this cistern in streets, the water is delivered clean to the engine; all grit, stones, and substances that might injure the works, being wholly excluded.

These "portable dams" have, for the last four years, been constantly employed by the engineers of the London

Fire Establishment, with incalculable advantage. Their value at the late fire at Davies' Wharf, Horsleydown, was strikingly manifest; while the whole of the roadway was covered with floating oil and turpentine, the engines were supplied with pure water by the portable cisterns. But for their employment, the engines would have been throwing back into the fire water largely mixed with oil and turpentine, thereby increasing the fury of the flames.

This simple piece of apparatus supersedes a cistern in the engine, which may therefore be reduced in its dimensions, or stored with hose and other matters useful at fires. The suction-cock, the most precarious part of a fire-engine, is also rendered wholly unnecessary, which reduces the cost, and ensures the efficient performance of the engine.

Any further explanation that the Society may deem acceptable, I shall be most happy to give; and shall only add, that I have most perseveringly laboured for sixteen years, at great expense and considerable personal exertion, to procure the general adoption of this very useful and convenient apparatus, without ever seeking the slightest personal advantage. I therefore look, with some degree of confidence, for such an encouragement as your Society shall consider adequate to the merits of my invention.

I am, Sir, &c. &c.

A. Aikin Esq. WILLIAM BADDELEY.
Secretary, &c. &c.

P.S. I enclose testimonials from Mr. Braidwood, the superintendent of the London Fire-Engine Establishment, and from the two principal engine makers in the metropolis, whose experience of the advantages of my invention will, I am sure, be highly satisfactory to the Society.

W. B.

Reference to the Figures.

The cistern is made of a wooden frame, *aa,* fig. 1, and a board, *bb,* which goes loosely into it, so as to pack into the same thickness, which is about two or three inches.

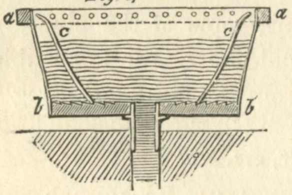
Fig. 4

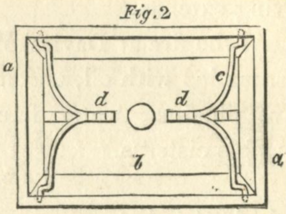
Fig. 2

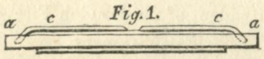
Fig. 1.

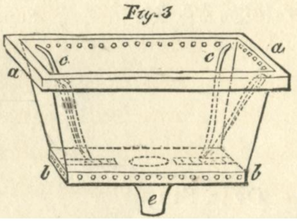
Fig. 3

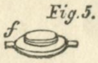
Fig. 5.

These are united by cloth, which is nailed to the inside of the frame, and to the outside of the board; so that when the board is allowed to fall out, and the rods *cc* to drop after it, and catch in the racks *dd,* fig. 2 (which is a top view), it is rendered stiff and ready to hold water. Fig. 3 is a perspective view, as ready for use; and fig. 4 is a section of the cistern in use, or in the act of being filled from a plug. The rods, *cc,* enter into holes in the frame, which serve as joints; a short pipe *e* is screwed into the central hole of the bottom piece, to fit the cistern to a plug, as in fig. 4; but if it is to be placed under a pump, or if water is to be poured in from a bucket, &c., the flat cap *f,* fig. 5, is screwed in instead of the pipe *e.*

London, 68 *Watling Street*,
27th Feb. 1838.

Dear Sir,

In answer to your letter of the 20th instant, I beg leave to state that the "portable cisterns" have been of very great service to the London Fire-Engine Establishment, and are becoming daily more useful, as the new plan of paving extends.

At the fire at Davies' Wharf, some of the plugs were surrounded with oil, and it would have been impossible to have obtained water free from oil without using the portable cisterns.

I am, Sir, &c, &c.

James Braidwood,
Superintendent of the London Fire-Engine Establishment.

A. Aikin, Esq.
Secretary, &c. &c.

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245 *Blackfriars' Road*,
22d Feb. 1838.

Dear Sir,

In reply to your letter of 20th instant, requesting my opinion of your "portable dam," I beg to state that I consider it a most useful invention, which I have often availed myself of, and that they are almost indispensable with the London engines. Now, the paving of the streets is so firmly cemented, as to render it a tedious and difficult task to form dams as heretofore. Your dam, on the instant drawing of the fire-plug, forms a reservoir of water for the fire-engine, excluding grit, straws, or any other matter that might impede its working.

I am, Sir, &c. &c.

W. J. Tilley.

A. Aikin, Esq.
Secretary, &c. &c.

Sir, *Long Acre, Feb.* 23, 1838.

I have made several of your portable dams, or water tanks, both for London and the country, which are carried inside of the engines; and I consider, from the very portability and simplicity of construction, that they are decidedly superior to the old plan, or any other plan that has come within my experience—not only for their portability, but directly a plug is drawn from the street you have a supply of water for the engine, which is very essential, and of the utmost importance at the commencement of a fire. In the country it is also a great acquisition; for instead of carrying a great tub on the engines, this dam is substituted, which is kept supplied by a quantity of buckets. It is much better to use a tank of this description with a suction-pipe in it, than to fill the engine; for, in the latter case, a great quantity of water is wasted in pouring it in the cistern.

I am, Sir, &c. &c.

J. W. Merryweather.

Mr W. Baddeley.